National Aeronautics and
Space Administration
Headquarters
Washington, DC 20546-0001

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Reply to Attn of: OI

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW
Washington, DC 20554

Re: Ex Parte Presentation
CC Docket No. 92-297

Dear Mr. Caton:

Enclosed are comments of the National Aeronautics and Space Administration concerning two recently filed 28 GHz band segmentation proposals submitted to the FCC by the Law Offices of Michael R. Gardner on May 11, 1995, and by Wiley, Rein and Fielding on May 12, 1995.

Sincerely,

Charles T. Force
Associate Administrator for
Space Communications

Enclosure

cc:
FCC/Chairman Reed E. Hundt
FCC/Commissioner James C. Quello
FCC/Commissioner Susan P. Ness
FCC/Commissioner Andrew C. Barrett
FCC/Commissioner Rachelle B. Chong
FCC/Mr. Robert M. Pepper
FCC/Mr. Scott Blake Harris
FCC/Mr. Thomas S. Tycz
FCC/Mr. Robert James

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FCC/Ms. Lauren J. Belvin
FCC/Mr. Rudolfo M. Baca
FCC/Ms. Lisa B. Smith
FCC/Ms. Jane Mago
FCC/Ms. Jill Luckett
FCC/Mr. James Casserly
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FCC/Mr. Gerald P. Vaughn
FCC/Mr. Lawrence Atlas

NASA Position Regarding Recent 28 GHz Band Segmentation Proposals

Two proposals have recently been put before the FCC in attempts to offer a solution to the issues surrounding use of the 27.5-29.5 GHz band. The first proposal, submitted to the FCC on May 11, 1995, through the law offices of Michael Gardner and endorsed by CellularVision, its partners and equipment suppliers, offers little in the way of true compromise. The proposed segmentation would allocate 1500 of the 2000 MHz in question to LMDS on a primary basis and the remaining 500 MHz to LMDS on a secondary basis. Included in the LMDS primary allocation is the band 27.5-28.5 GHz (so called band A) most highly coveted by CellularVision and its partners. Geostationary satellite services, on the other hand, have no primary allocation identified in the band and are offered the opportunity to seek spectrum in what is currently allocated to Earth-exploration satellite services and government-only spectrum at 27.0-27.5 GHz and 30.0-30.5 GHz. Only non-geostationary FSS and MSS feederlink systems receive any spectrum in the 28 GHz band on a primary basis.

NASA has significant concerns about the potential impact that this proposal for the 27.0-27.5 GHz band would have on future Earth-exploration satellite and space research operations. During WARC-92 the United States was successful in achieving changes to the international frequency tables that allocated the band 25.25-27.5 GHz to the Inter-Satellite Service on a co-primary basis. Footnotes restrict this use to space research and Earth exploration satellite applications and for transmissions of data originating from industrial and medical activities in space. These allocation changes were sought and supported by space agencies throughout the world to provide critically needed frequency spectrum to support data relay satellite applications. NASA has recently announced the award of a $480 M contract for procurement of three new satellites for the Tracking and Data Relay Satellite System that will become operational around the year 2000. These spacecraft will utilize the 25.25-27.5 GHz band to support high data rate Earth exploration applications. The 25.25-27.5 GHz band will also be used by NASA and other space administrations to provide direct space-to-space proximity operation communications between low earth orbiting spacecraft, such as the International Space Station Alpha and the Space Shuttle orbiter. The segmentation provision which would place GEO and/or LEO uplink transmissions in the band 27.0-27.5 GHz would significantly impact the utilization of this band for its intended and necessary purposes of supporting space research and Earth exploration activities.

The second segmentation proposal, submitted to the FCC on May 12, 1995, by the law offices of Wiley, Rein & Fielding and endorsed by Texas Instruments, Hughes, Teledesic and Boeing, appears to have been drafted in a true spirit of compromise, as evidenced by the support from both LMDS and satellite interests. Unlike the first proposal, allocations are wholly within the band 27.5-30.0 GHz and do not include provisions for seeking spectrum outside of the band in question under the FCC's CC Docket No. 92-297, RM-7872; RM-7722.

The second proposal forces both LMDS and satellite interests to compromise on their original positions and accept reduced primary spectrum allocations. GEO and non-GEO FSS systems will be forced to develop ways of sharing their available spectrum in order to satisfy

current and future requirements. Digital technologies, which have been being proven to be cost effective and available today, would enable LMDS proponents to offer video services that far exceed the currently proposed analog systems, within the bandwidth allocated to LMDS. In the interim time until LMDS systems are ready to convert to digital video, the segmentation proposal provides the opportunity to utilize 1000 MHz by LMDS proponents on a primary basis (27.5-28.0 GHz and 29.0-29.5 GHz) to accommodate 50 channels of analog video. Future expansion of LMDS-like services and additional requirements for spectrum could be satisfied through appropriate allocation of spectrum in the band 40.5-42.5 GHz as proposed by the FCC in ET Docket No. 94-124.[1,2]

NASA recognizes the extremely difficult situation that the FCC finds itself in over future use of the 28 GHz spectrum. Therefore, while NASA still firmly believes that in the long run designation of the 40.5-42.5 GHz band for LMDS operation in lieu of 28 GHz offers the best solution for both industries[3], if segmentation of the band is deemed by all parties to be the only acceptable resolution, the allocation plan submitted by Wiley, Rein and Fielding would appear to be a suitable compromise. The Commission would be able to act upon pending filings by both LMDS and satellite proponents, and both industries could begin to move forward in offering new and exciting services to the American public.

We would be remiss if we did not state to the Commission our view of the probable long term consequences that segmentation entails. Limiting the primary spectrum available for satellite services in the 27.5-29.5 GHz band will impede the growth of the satellite industry, reduce competition among satellite providers and preclude future service opportunities yet to be identified. Reaching a solution which satisfies the present needs of a small subset of the potential players in both industries, will have lasting consequences on the future use of this valuable spectrum.

Internationally, the 27.5-29.5 GHz band will continue to be allocated on a primary basis for FSS Earth-to-Space links regardless of decision made within the United States. As satellite applications are becoming increasingly global in nature, deviation from internationally recognized allocations by the U.S. will have adverse economic and competitive implications on the satellite industry as well as affecting our regulatory influence at future World Radiocommunications Conferences.

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1 Comments of the National Aeronautics and Space Administration regarding ET Docket No. 94-124, Rm-8308

2 Reply Comments of the National Aeronautics and Space Administration regarding ET Docket No. 94-124, RM-8308

3 "Suitability of 40.5-42.5 GHz for LMDS", NASA Ex Parte presentations regarding CC Docket No. 92-297, RM-7872; RM-7722 and ET Docket 94-124, RM-8308

Michael Gardner et. al.
28 GHz Segmentation Proposal
(reproduced from 5/11/95 filing)
(Referred to in text as "first proposal")

Joint Parties 28 GHz Proposal

27.0-27.5[1]	27.5-28.0	28.0-28.5	28.5-29.0	29.0-29.5	29.5-30.0	30.0-30.5[1]
(GEO or LEO)	LMDS		LEO	LMDS/ BIG LEO FEEDERLINKS (Co-primary)	GEO	(GEO or LEO)
(Leo or Geo) (Pt-to-Pt)	Leo	Geo	Lmds[2]		Leo Pt-to-Pt	(Leo or Geo)

GEO = Hughes, Loral, etc.

LEO = Teledesic

BIG LEO = Motorola (and possibly TRW)

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1 Suggested allocation; 27.0-27.5 and 30.0-30.5 GHz allocations to be finally determined based on the availability of 500 MHz or 1 GHz of shared industry-government spectrum.

2 Secondary allocation, contingent on verification of co-frequency sharing per Bellcore Study.

Wiley, Rein & Fielding et. al.
28 GHz Segmentation Proposal
(reproduced from Attachment 1 of 5/12/95 filing)
(Referred to in text as "second proposal")

	Services
27.5	
	LOCAL MULTIPOINT DISTRIBUTION SERVICE Fixed-Satellite Service
28.0	
	FIXED-SATELLITE SERVICE (Non-GEO) Fixed-Satellite Service (GEO) Fixed
28.5	
	FIXED-SATELLITE SERVICE (GEO) Fixed-Satellite Service (Non-GEO) Fixed
29.0	
	FIXED-SATELLITE SERVICE (Non-GEO MSS Feeder Links) LOCAL MULTIPOINT DISTRIBUTION SERVICE
29.5	
	FIXED-SATELLITE SERVICE (GEO) Fixed-Satellite Service (Non-GEO)
30.0	